JAPANESE [JP,2002-197005,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1] In the service vicarious execution control approach of offering service currently offered on the session set up between the applications and the servers which were stored in a user's terminal instead of said application The storage step which memorizes the session information about said session according to a demand of said user, Said session whether it is continuing between said applications and said servers at the monitor step to supervise and this monitor step When it is judged that said session was interrupted The vicarious execution step which continues said session between said servers instead of said application based on said session information memorized at said storage step, The service vicarious execution control approach characterized by having the transfer step which transmits said service on said session received at this vicarious execution step to said application.
[Claim 2] It is the service vicarious-execution control approach according to claim 1 of having the conversion step which changes a receiving format according to said capacity detected at this detection step in said service on said session which received at the detection step which detects capacity for said application to receive said service, and said vicarious-execution step, and carrying out said transfer step transmitting said service in said receiving format changed at said conversion step as the description.
[Claim 3] The service currently offered on the session set up between the applications and the servers which were stored in a user's terminal The storage step which is the record medium which recorded the program performed instead of said application, and memorizes the session information about said session according to a demand of said user, Said session whether it is continuing between said applications and said servers at the monitor step to supervise and this monitor step When it is judged that said session was interrupted The vicarious execution step which continues said session between said servers instead of said application based on said session information memorized at said storage step, The record medium which recorded the program for making a computer perform the transfer step which transmits said service on said session received at this vicarious execution step to said application and in which computer reading is possible.
[Claim 4] It is the record medium possible in computer reading according to claim 3 have the conversion step which changes a receiving format according to said capacity detected at this detection step in said service on said session which received at the detection step which detects capacity for said application to receive said service, and said vicarious-execution step, and carry out that said transfer step transmits said service in said receiving format changed at said conversion step as the description.
[Claim 5] The service currently offered on the session set up between the applications and the servers which were stored in a user's terminal The storage step which is the program performed instead of said application, and memorizes the session information about said session according to a demand of said user, Said session whether it is continuing between said applications and said servers at the monitor step to supervise and this monitor step When it is judged that said session was interrupted The vicarious execution step which continues said session between said servers instead of said application based on said session information memorized at said storage

step, The program for making a computer perform the transfer step which transmits said service on said session received at this vicarious execution step to said application.
[Claim 6] It is the program according to claim 5 have the conversion step which changes a receiving format according to said capacity detected at this detection step in said service on said session received at the detection step which detects capacity for said application to receive said service, and said vicarious-execution step, and carry out that said transfer step transmits said service in said receiving format changed at said conversion step as the description.

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any
damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] About the service vicarious execution control approach, more, this invention makes the service which a user was not able to complete in a detail execute by proxy by the agent, and relates to the service vicarious execution control approach which notifies a user of a service result.
[0002]
[Description of the Prior Art] The approach of downloading the information which a user needs from an information provider's WWW (WorldWide Web) server as the approach of the information distribution in the Internet is learned. When a user has two or more computers and is building LAN (Local Area Network), in order to connect the Internet with LAN, it is common to use a proxy server. A proxy server has the function to restrict the packet which flows into LAN from the Internet side based on a predetermined security policy etc.
[0003] Moreover, the proxy server has the cache function so that it may be represented by httpd (hyper text transfer protocol daemon). A cache function accumulates serially the packet which passes a proxy server, and the data which a user demands carry out vicarious execution return of it, when contained in the stored data. When downloading information from a WWW server, the traffic to the WWW server which actually sends out data can be mitigated by the cache function.
[0004]
[Problem(s) to be Solved by the Invention] However, it does not have the function in which a cache function executes by proxy and stores data while being interrupted to interruption of the service which a user does not mean, i.e., interruption of download. Therefore, there was a problem that information transfer could not be guaranteed, to interruption of service.
[0005] There was also a problem of it having been said that it cannot know that there is no method of coping with interruption of service by failure of a WWW server or cutting of a circuit, and service resumed for the user.
[0006] This invention was made in view of such a problem, and the place made into the purpose is by executing service by proxy to interruption of the service which a user does not mean to offer the service vicarious execution control approach which prevents interruption of service.
[0007]
[Means for Solving the Problem] In order to attain such a purpose, this invention invention according to claim 1 In the service vicarious execution control approach of offering service currently offered on the session set up between the applications and the servers which were stored in a user's terminal instead of said application The storage step which memorizes the session information about said session according to a demand of said user, Said session whether it is continuing between said applications and said servers at the monitor step to supervise and this monitor step When it is judged that said session was interrupted The vicarious execution step which continues said session between said servers instead of said application based on said session information memorized at said storage step, It is characterized by having the transfer step which transmits said service on said session received at this vicarious execution step to

said application.
[0008] According to this approach, by reproducing a session to interruption of the service which a user does not mean based on the memorized session information, service can be executed by proxy and service can be completed instead of a user.
[0009] The detection step to which invention according to claim 2 detects capacity for said application to receive said service in claim 1, In said service on said session received at said vicarious execution step, said capacity detected at this detection step is embraced. It has the conversion step which changes a receiving format, and said transfer step is characterized by transmitting said service in said receiving format changed at said conversion step.
[0010] Since the receiving format of service is changed according to the capacity to receive service of a user's terminal according to this approach, information transfer can be guaranteed.
[0011] Invention according to claim 3 the service currently offered on the session set up between the applications and the servers which were stored in a user's terminal The storage step which is the record medium which recorded the program performed instead of said application, and memorizes the session information about said session according to a demand of said user, Said session whether it is continuing between said applications and said servers at the monitor step to supervise and this monitor step When it is judged that said session was interrupted The vicarious execution step which continues said session between said servers instead of said application based on said session information memorized at said storage step, It is characterized by being the record medium which recorded the program for making a computer perform the transfer step which transmits said service on said session received at this vicarious execution step to said application and in which computer reading is possible.
[0012] The detection step to which invention according to claim 4 detects capacity for said application to receive said service in claim 3, In said service on said session received at said vicarious execution step, said capacity detected at this detection step is embraced. It has the conversion step which changes a receiving format, and said transfer step is characterized by transmitting said service in said receiving format changed at said conversion step.
[0013] Invention according to claim 5 the service currently offered on the session set up between the applications and the servers which were stored in a user's terminal The storage step which is the program performed instead of said application, and memorizes the session information about said session according to a demand of said user, Said session whether it is continuing between said applications and said servers at the monitor step to supervise and this monitor step When it is judged that said session was interrupted The vicarious execution step which continues said session between said servers instead of said application based on said session information memorized at said storage step, It is characterized by being a program for making a computer perform the transfer step which transmits said service on said session received at this vicarious execution step to said application.
[0014] The detection step to which invention according to claim 6 detects capacity for said application to receive said service in claim 5, In said service on said session received at said vicarious execution step, said capacity detected at this detection step is embraced. It has the conversion step which changes a receiving format, and said transfer step is characterized by transmitting said service in said receiving format changed at said conversion step.
[0015]
[Embodiment of the Invention] Hereafter, the operation gestalt of this invention is explained to a detail, referring to a drawing.
[0016] Drawing 1 is a functional block diagram for explaining the service vicarious execution control approach concerning 1 operation gestalt of this invention. The terminal 101 of the user who receives service, and the WWW server 102 which offers service are connected through the network 103. The network 103 has the software module which consists of a service agent (henceforth SA) 111 who performs the service vicarious execution control approach concerning this invention, and an e-mail transfer agent (henceforth MTA) 113 who performs transfer control of e-mail.
[0017] The terminal 101 has 112 with the e-mail user agent (henceforth MUA) who controls the application 114 for receiving service, and transmission and reception of e-mail. In this operation

gestalt, although the agent who performs service vicarious execution explains the case of application 114, and the case of MUA112, you may be either and may be other applications, such as a browser, for example.

[0018] The session storage section 121 which SA111 is connected to the WWW server 102, application 114, and MUA112, and memorizes a session, The substitute demand section 123 connected to the WWW server 102 which performs the demand for vicarious execution control, As a result of connecting with application 114 and MUA112, it has the notice section 122, the substitute receive section 125 connected to the WWW server 102 which executes by proxy and acquires information, and the media conversion section 124 connected to MTA113.

[0019] By such configuration, the session storage section 121 of SA111 memorizes the session for every corresponding user, when there is a demand from a user. When service stops according to the failure of the WWW server 102 etc. and information transfer is interrupted, a demand of a user is executed by proxy through the substitute demand section 123. The substitute demand section 123 reproduces the session memorized by the session storage section 121 between the WWW servers 102. If acknowledgement of a service request is received, when it can judge whether a user continues and the notice section 122 of a result can receive service and can receive from the WWW server 102, a result is notified to application 114.

[0020] The substitute receive section 125 is supervising the connection condition of the session memorized by the session storage section 121. For example, when a circuit is cut before receiving a HTTP response, when the user has received information distribution by HTTP (Hyper Text Transfer Protocol), the substitute receive section 125 receives information instead of a user. In the media conversion section 124, if the capacity of a user's MUA112 can be judged and MUA112 can receive information as it is, the received information will be changed into an electronic mail format, and it will transmit to MTA113. When MUA112 cannot receive, the media conversion section 124 transmits to MTA113 according to an electronic mail format according to the capacity of MUA112.

[0021] Drawing 2 is a flow chart which shows the service vicarious execution control approach concerning 1 operation gestalt of this invention. When there is a demand from a user, the session between a user's terminal 101 and the WWW server 102 is memorized session storage section 121 (S201). For example, when HTTP is being used, as a result, the HTTP responses returned to a user's terminal 101 from the WWW server 102 are remembered to be HTTP requests transmitted to the WWW server 102 from a user's terminal 101, such as GET and POST.

[0022] In the session storage section 121, it supervises whether the suitable result is returned from the WWW server 102 to the demand of a user about the memorized session (S202). When the suitable result is not returned, the session information memorized by the session storage section 121 is used, and a demand of the user to the WWW server 102 is executed by proxy through the substitute demand section 123 (S203). When it supervises succeedingly whether the suitable result is returned from the WWW server 102 and the suitable result is not returned in it to the demand of a user, vicarious execution of a user demand is repeated (S204).

[0023] It judges whether if acknowledgement of a service request is received, a user continues and the notice section 122 of a result can receive service from the WWW server 102 (S205). When service can be received, the notice section 122 of a result transmits the information which notified and (S206) received the result to application 114 to a user as it is, and is completed. When service cannot be received, it moves to the processing which performs media conversion later mentioned in drawing 3 , and is transmitted.

[0024] Drawing 3 is a flow chart which shows the approach of the media conversion in the service vicarious execution control approach concerning 1 operation gestalt of this invention. In the substitute receive section 125, the response from the WWW server 102 to a demand of a user is received (S301). For example, when the user has received information distribution by HTTP, a HTTP response is received, and it judges that the service interruption which a user does not mean occurred when a circuit was sometimes cut, it built and it was, and the substitute receive section 125 receives information instead of a user.

[0025] In the media conversion section 124, the capacity of a user's MUA112 is judged and it judges whether MUA112 can receive information as it is (S302). If MUA112 can receive

information as it is, the received information will be changed into an electronic mail format, and it will transmit to MTA113 (S303). When MUA112 cannot receive, the media conversion section 124 transmits to MTA113 according to an electronic mail format according to the capacity of MUA112 (S304).

[0026] For example, the case where the communications service by the document of a HTML (Hyper Test Markup Language) format is received from the WWW server 102 is explained. In the media conversion section 124, when it is judged that only the document of the text format whose capacity of a user's MUA112 is one of the electronic mail formats is receivable, the media conversion section 124 changes the document of a HTML format into the document of text format. An absolute path is displayed for the document link of HTML by text format, or, specifically, a HTML input tag is changed into notations, such as ().

[0027] According to this operation gestalt, by reproducing a session to interruption of the service which a user does not mean based on the memorized session information, service can be executed by proxy and service can be completed instead of a user.

[0028] Moreover, since interrupted service can be executed by proxy and service can be completed instead of a user when the Internet connectivity of a specific charge system is being performed, accounting useless for a user can be prevented.

[0029] Furthermore, in migration communication system, since cutting of a circuit starts by fluctuation of a wireless circuit, according to this operation gestalt, the result of service can be promptly received after circuit restoration.

[0030]

[Effect of the Invention] As explained above, according to this invention, it becomes possible by executing service by proxy to prevent interruption of service to interruption of the service which a user does not mean.

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

TECHNICAL FIELD

[Field of the Invention] About the service vicarious execution control approach, more, this invention makes the service which a user was not able to complete in a detail execute by proxy by the agent, and relates to the service vicarious execution control approach which notifies a user of a service result.

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any
damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

PRIOR ART

[Description of the Prior Art] The approach of downloading the information which a user needs from an information provider's WWW (WorldWide Web) server as the approach of the information distribution in the Internet is learned. When a user has two or more computers and is building LAN (Local Area Network), in order to connect the Internet with LAN, it is common to use a proxy server. A proxy server has the function to restrict the packet which flows into LAN from the Internet side based on a predetermined security policy etc.
[0003] Moreover, the proxy server has the cache function so that it may be represented by httpd (hyper text transfer protocol daemon). A cache function accumulates serially the packet which passes a proxy server, and the data which a user demands carry out vicarious execution return of it, when contained in the stored data. When downloading information from a WWW server, the traffic to the WWW server which actually sends out data can be mitigated by the cache function.

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

EFFECT OF THE INVENTION

[Effect of the Invention] As explained above, according to this invention, it becomes possible by executing service by proxy to prevent interruption of service to interruption of the service which a user does not mean.

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] However, it does not have the function in which a cache function executes by proxy and stores data while being interrupted to interruption of the service which a user does not mean, i.e., interruption of download. Therefore, there was a problem that information transfer could not be guaranteed, to interruption of service.
[0005] There was also a problem of it having been said that it cannot know that there is no method of coping with interruption of service by failure of a WWW server or cutting of a circuit, and service resumed for the user.
[0006] This invention was made in view of such a problem, and the place made into the purpose is by executing service by proxy to interruption of the service which a user does not mean to offer the service vicarious execution control approach which prevents interruption of service.

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any
damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

MEANS

[Means for Solving the Problem] In order to attain such a purpose, this invention invention according to claim 1 In the service vicarious execution control approach of offering service currently offered on the session set up between the applications and the servers which were stored in a user's terminal instead of said application The storage step which memorizes the session information about said session according to a demand of said user, Said session whether it is continuing between said applications and said servers at the monitor step to supervise and this monitor step When it is judged that said session was interrupted The vicarious execution step which continues said session between said servers instead of said application based on said session information memorized at said storage step, It is characterized by having the transfer step which transmits said service on said session received at this vicarious execution step to said application.
[0008] According to this approach, by reproducing a session to interruption of the service which a user does not mean based on the memorized session information, service can be executed by proxy and service can be completed instead of a user.
[0009] The detection step to which invention according to claim 2 detects capacity for said application to receive said service in claim 1, In said service on said session received at said vicarious execution step, said capacity detected at this detection step is embraced. It has the conversion step which changes a receiving format, and said transfer step is characterized by transmitting said service in said receiving format changed at said conversion step.
[0010] Since the receiving format of service is changed according to the capacity to receive service of a user's terminal according to this approach, information transfer can be guaranteed.
[0011] Invention according to claim 3 the service currently offered on the session set up between the applications and the servers which were stored in a user's terminal The storage step which is the record medium which recorded the program performed instead of said application, and memorizes the session information about said session according to a demand of said user, Said session whether it is continuing between said applications and said servers at the monitor step to supervise and this monitor step When it is judged that said session was interrupted The vicarious execution step which continues said session between said servers instead of said application based on said session information memorized at said storage step, It is characterized by being the record medium which recorded the program for making a computer perform the transfer step which transmits said service on said session received at this vicarious execution step to said application and in which computer reading is possible.
[0012] The detection step to which invention according to claim 4 detects capacity for said application to receive said service in claim 3, In said service on said session received at said vicarious execution step, said capacity detected at this detection step is embraced. It has the conversion step which changes a receiving format, and said transfer step is characterized by transmitting said service in said receiving format changed at said conversion step.
[0013] Invention according to claim 5 the service currently offered on the session set up between the applications and the servers which were stored in a user's terminal The storage step which is the program performed instead of said application, and memorizes the session information about said session according to a demand of said user, Said session whether it is

continuing between said applications and said servers at the monitor step to supervise and this monitor step When it is judged that said session was interrupted The vicarious execution step which continues said session between said servers instead of said application based on said session information memorized at said storage step, It is characterized by being a program for making a computer perform the transfer step which transmits said service on said session received at this vicarious execution step to said application.

[0014] The detection step to which invention according to claim 6 detects capacity for said application to receive said service in claim 5, In said service on said session received at said vicarious execution step, said capacity detected at this detection step is embraced. It has the conversion step which changes a receiving format, and said transfer step is characterized by transmitting said service in said receiving format changed at said conversion step.

[0015]

[Embodiment of the Invention] Hereafter, the operation gestalt of this invention is explained to a detail, referring to a drawing.

[0016] Drawing 1 is a functional block diagram for explaining the service vicarious execution control approach concerning 1 operation gestalt of this invention. The terminal 101 of the user who receives service, and the WWW server 102 which offers service are connected through the network 103. The network 103 has the software module which consists of a service agent (henceforth SA) 111 who performs the service vicarious execution control approach concerning this invention, and an e-mail transfer agent (henceforth MTA) 113 who performs transfer control of e-mail.

[0017] The terminal 101 has 112 with the e-mail user agent (henceforth MUA) who controls the application 114 for receiving service, and transmission and reception of e-mail. In this operation gestalt, although the agent who performs service vicarious execution explains the case of application 114, and the case of MUA112, you may be either and may be other applications, such as a browser, for example.

[0018] The session storage section 121 which SA111 is connected to the WWW server 102, application 114, and MUA112, and memorizes a session, The substitute demand section 123 connected to the WWW server 102 which performs the demand for vicarious execution control, As a result of connecting with application 114 and MUA112, it has the notice section 122, the substitute receive section 125 connected to the WWW server 102 which executes by proxy and acquires information, and the media conversion section 124 connected to MTA113.

[0019] By such configuration, the session storage section 121 of SA111 memorizes the session for every corresponding user, when there is a demand from a user. When service stops according to the failure of the WWW server 102 etc. and information transfer is interrupted, a demand of a user is executed by proxy through the substitute demand section 123. The substitute demand section 123 reproduces the session memorized by the session storage section 121 between the WWW servers 102. If acknowledgement of a service request is received, when it can judge whether a user continues and the notice section 122 of a result can receive service and can receive from the WWW server 102, a result is notified to application 114.

[0020] The substitute receive section 125 is supervising the connection condition of the session memorized by the session storage section 121. For example, when a circuit is cut before receiving a HTTP response, when the user has received information distribution by HTTP (Hyper Text Transfer Protocol), the substitute receive section 125 receives information instead of a user. In the media conversion section 124, if the capacity of a user's MUA112 can be judged and MUA112 can receive information as it is, the received information will be changed into an electronic mail format, and it will transmit to MTA113. When MUA112 cannot receive, the media conversion section 124 transmits to MTA113 according to an electronic mail format according to the capacity of MUA112.

[0021] Drawing 2 is a flow chart which shows the service vicarious execution control approach concerning 1 operation gestalt of this invention. When there is a demand from a user, the session between a user's terminal 101 and the WWW server 102 is memorized session storage section 121 (S201). For example, when HTTP is being used, as a result, the HTTP responses returned to a user's terminal 101 from the WWW server 102 are remembered to be HTTP requests

transmitted to the WWW server 102 from a user's terminal 101, such as GET and POST.
[0022] In the session storage section 121, it supervises whether the suitable result is returned from the WWW server 102 to the demand of a user about the memorized session (S202). When the suitable result is not returned, the session information memorized by the session storage section 121 is used, and a demand of the user to the WWW server 102 is executed by proxy through the substitute demand section 123 (S203). When it supervises succeedingly whether the suitable result is returned from the WWW server 102 and the suitable result is not returned in it to the demand of a user, vicarious execution of a user demand is repeated (S204).
[0023] It judges whether if acknowledgement of a service request is received, a user continues and the notice section 122 of a result can receive service from the WWW server 102 (S205). When service can be received, the notice section 122 of a result transmits the information which notified and (S206) received the result to application 114 to a user as it is, and is completed. When service cannot be received, it moves to the processing which performs media conversion later mentioned in drawing 3 , and is transmitted.
[0024] Drawing 3 is a flow chart which shows the approach of the media conversion in the service vicarious execution control approach concerning 1 operation gestalt of this invention. In the substitute receive section 125, the response from the WWW server 102 to a demand of a user is received (S301). For example, when the user has received information distribution by HTTP, a HTTP response is received, and it judges that the service interruption which a user does not mean occurred when a circuit was sometimes cut, it built and it was, and the substitute receive section 125 receives information instead of a user.
[0025] In the media conversion section 124, the capacity of a user's MUA112 is judged and it judges whether MUA112 can receive information as it is (S302). If MUA112 can receive information as it is, the received information will be changed into an electronic mail format, and it will transmit to MTA113 (S303). When MUA112 cannot receive, the media conversion section 124 transmits to MTA113 according to an electronic mail format according to the capacity of MUA112 (S304).
[0026] For example, the case where the communications service by the document of a HTML (Hyper Test Markup Language) format is received from the WWW server 102 is explained. In the media conversion section 124, when it is judged that only the document of the text format whose capacity of a user's MUA112 is one of the electronic mail formats is receivable, the media conversion section 124 changes the document of a HTML format into the document of text format. An absolute path is displayed for the document link of HTML by text format, or, specifically, a HTML input tag is changed into notations, such as ().
[0027] According to this operation gestalt, by reproducing a session to interruption of the service which a user does not mean based on the memorized session information, service can be executed by proxy and service can be completed instead of a user.
[0028] Moreover, since interrupted service can be executed by proxy and service can be completed instead of a user when the Internet connectivity of a specific charge system is being performed, accounting useless for a user can be prevented.
[0029] Furthermore, in migration communication system, since cutting of a circuit starts by fluctuation of a wireless circuit, according to this operation gestalt, the result of service can be promptly received after circuit restoration.

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is a functional block diagram for explaining the service vicarious execution control approach concerning 1 operation gestalt of this invention.
[Drawing 2] It is the flow chart which shows the service vicarious execution control approach concerning 1 operation gestalt of this invention.
[Drawing 3] It is the flow chart which shows the approach of the media conversion in the service vicarious execution control approach concerning 1 operation gestalt of this invention.
[Description of Notations]
101 User's Terminal
102 WWW Server
103 Network
111 Service Agent (SA)
112 E-mail User Agent (MUA)
113 E-mail Transfer Agent (MTA)
114 Application
121 Session Storage Section
122 Notice Section of Result
123 Substitute Demand Section
124 Media Conversion Section
125 Substitute Receive Section

[Translation done.]

引用文献 1

(19)日本国特許庁（ＪＰ）　(12)公開特許公報（Ａ）　(11)特許出願公開番号
特開2002－197005
（P2002－197005A）
(43)公開日　平成14年７月12日(2002.7.12)

(51)Int.Cl.[7]	識別記号	FI		テーマコード（参考）
Ｇ０６Ｆ　13/00	５２０	Ｇ０６Ｆ　13/00	５２０Ｒ	５Ｂ０８５
15/00	３１０	15/00	３１０Ｄ	５Ｋ０３０
Ｈ０４Ｌ　12/58	１００	Ｈ０４Ｌ　12/58	１００Ｆ	
			１００Ｃ	

審査請求　未請求　請求項の数6　ＯＬ　（全６頁）

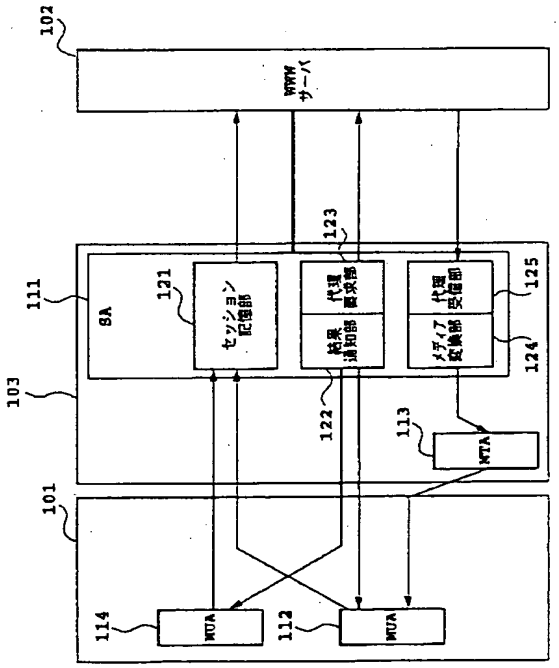
(21)出願番号　特願2000－395399(P2000－395399)
(22)出願日　平成12年12月26日(2000.12.26)

(71)出願人　392026693
株式会社エヌ・ティ・ティ・ドコモ
東京都千代田区永田町二丁目11番１号
(72)発明者　五十嵐　健
東京都千代田区永田町二丁目11番１号　株式会社エヌ・ティ・ティ・ドコモ内
(74)代理人　100077481
弁理士　谷　義一　（外２名）

Ｆターム(参考)　5B085 AC16 BC00 BG07 CA04
5K030 GA12 HA06 JL01 LB16 LD11

(54)【発明の名称】　サービス代行制御方法

(57)【要約】
【課題】　ユーザの意図しないサービスの中断に対して、サービスを代行することによって、サービスの中断を防ぐ。
【解決手段】　ユーザの端末１０１とWWWサーバ１０２は、ネットワーク１０３を介して接続されている。端末１０１は、サービス代行制御方法を実行するサービス・エージェント（ＳＡ）を備え、ＳＡ１１１は、WWWサーバ１０２とＭＵＡ１１２とに接続されて、セッションの記憶を行うセッション記憶部１２１と、代行制御のための要求を行う代理WWWサーバ１０２に接続された代理要求部１２３とＭＵＡ１１２に接続された結果通知部１２２と、代行して情報を取得するWWWサーバ１０２に接続された代理受信部１２５とＭＴＡ１１３に接続されたメディア変換部１２４とを有する。



1

【特許請求の範囲】

【請求項１】　ユーザの端末に格納されたアプリケーションとサーバとの間に設定されたセッション上で提供されているサービスを、前記アプリケーションに代って行うサービス代行制御方法において、

前記ユーザの要求に応じて、前記セッションに関するセッション情報を記憶する記憶ステップと、

前記セッションが、前記アプリケーションと前記サーバとの間で継続しているか否かを監視する監視ステップと、

該監視ステップで、前記セッションが中断したと判断した場合には、前記アプリケーションに代って、前記記憶ステップで記憶した前記セッション情報に基づいて、前記サーバとの間で前記セッションを継続する代行ステップと、

該代行ステップで受信した前記セッション上の前記サービスを、前記アプリケーションに転送する転送ステップとを備えることを特徴とするサービス代行制御方法。

【請求項２】　前記アプリケーションが前記サービスを受信するための能力を検出する検出ステップと、前記代行ステップで受信した前記セッション上の前記サービスを、該検出ステップで検出された前記能力に応じて、受信形式を変換する変換ステップとを備え、

前記転送ステップは、前記変換ステップで変換された前記受信形式で前記サービスを転送することを特徴とする請求項１に記載のサービス代行制御方法。

【請求項３】　ユーザの端末に格納されたアプリケーションとサーバとの間に設定されたセッション上で提供されているサービスを、前記アプリケーションに代って行うプログラムを記録した記録媒体であって、

前記ユーザの要求に応じて、前記セッションに関するセッション情報を記憶する記憶ステップと、

前記セッションが、前記アプリケーションと前記サーバとの間で継続しているか否かを監視する監視ステップと、

該監視ステップで、前記セッションが中断したと判断した場合には、前記アプリケーションに代って、前記記憶ステップで記憶した前記セッション情報に基づいて、前記サーバとの間で前記セッションを継続する代行ステップと、

該代行ステップで受信した前記セッション上の前記サービスを、前記アプリケーションに転送する転送ステップとをコンピュータに実行させるためのプログラムを記録したコンピュータ読み取り可能な記録媒体。

【請求項４】　前記アプリケーションが前記サービスを受信するための能力を検出する検出ステップと、前記代行ステップで受信した前記セッション上の前記サービスを、該検出ステップで検出された前記能力に応じて、受信形式を変換する変換ステップとを備え、

前記転送ステップは、前記変換ステップで変換された前記受信形式で前記サービスを転送することを特徴とする請求項３に記載のコンピュータ読み取り可能な記録媒体。

【請求項５】　ユーザの端末に格納されたアプリケーションとサーバとの間に設定されたセッション上で提供されているサービスを、前記アプリケーションに代って行うプログラムであって、

前記ユーザの要求に応じて、前記セッションに関するセッション情報を記憶する記憶ステップと、

前記セッションが、前記アプリケーションと前記サーバとの間で継続しているか否かを監視する監視ステップと、

該監視ステップで、前記セッションが中断したと判断した場合には、前記アプリケーションに代って、前記記憶ステップで記憶した前記セッション情報に基づいて、前記サーバとの間で前記セッションを継続する代行ステップと、

該代行ステップで受信した前記セッション上の前記サービスを、前記アプリケーションに転送する転送ステップとをコンピュータに実行させるためのプログラム。

【請求項６】　前記アプリケーションが前記サービスを受信するための能力を検出する検出ステップと、前記代行ステップで受信した前記セッション上の前記サービスを、該検出ステップで検出された前記能力に応じて、受信形式を変換する変換ステップとを備え、

前記転送ステップは、前記変換ステップで変換された前記受信形式で前記サービスを転送することを特徴とする請求項５に記載のプログラム。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】本発明は、サービス代行制御方法に関し、より詳細には、ユーザが完結できなかったサービスを、エージェントによって代行させ、サービス結果をユーザに通知するサービス代行制御方法に関する。

【０００２】

【従来の技術】インターネットにおける情報配信の方法として、情報提供者のＷＷＷ（WorldWide Web）サーバから、ユーザが必要な情報をダウンロードする方法が知られている。ユーザが複数のコンピュータを有し、ＬＡＮ（Local Area Network）を構築している場合には、ＬＡＮとインターネットを接続するために、プロキシ・サーバを使用するのが一般的である。プロキシ・サーバは、インターネット側から、ＬＡＮに流入するパケットを、所定のセキュリティ・ポリシィに基づいて制限する機能などを有する。

【０００３】また、httpd（hyper text transfer protocol daemon）に代表されるように、プロキシ・サーバは、キャッシュ機能を有している。キャッシュ機能とは、プロキシ・サーバを通過するパケットを逐次蓄積

し、ユーザが要求するデータが、蓄積されたデータの中に含まれている場合に代行返送するものである。WWWサーバから情報をダウンロードする場合には、キャッシュ機能によって、実際にデータを送出するWWWサーバへのトラヒックを軽減することができる。

【０００４】

【発明が解決しようとする課題】しかしながら、キャッシュ機能は、ユーザの意図しないサービスの中断、すなわちダウンロードの中断に対して、中断している間のデータを代行して蓄積するといった機能は有していない。従って、サービスの中断に対しては、情報転送の保証ができないという問題があった。

【０００５】ユーザにとって、WWWサーバの故障または回線の切断などによるサービスの中断に対処する方法がなく、また、サービスが再開したことを知ることが出来ないといったという問題もあった。

【０００６】本発明は、このような問題に鑑みてなされたもので、その目的とするところは、ユーザの意図しないサービスの中断に対して、サービスを代行することによって、サービスの中断を防ぐサービス代行制御方法を提供することにある。

【０００７】

【課題を解決するための手段】本発明は、このような目的を達成するために、請求項１に記載の発明は、ユーザの端末に格納されたアプリケーションとサーバとの間に設定されたセッション上で提供されているサービスを、前記アプリケーションに代って行うサービス代行制御方法において、前記ユーザの要求に応じて、前記セッションに関するセッション情報を記憶する記憶ステップと、前記セッションが、前記アプリケーションと前記サーバとの間で継続しているか否かを監視する監視ステップと、該監視ステップで、前記セッションが中断したと判断した場合には、前記アプリケーションに代って、前記記憶ステップで記憶した前記セッション情報に基づいて、前記サーバとの間で前記セッションを継続する代行ステップと、該代行ステップで受信した前記セッション上の前記サービスを、前記アプリケーションに転送する転送ステップとを備えることを特徴とする。

【０００８】この方法によれば、ユーザの意図しないサービスの中断に対して、記憶されたセッション情報に基づいてセッションを再現することによって、サービスを代行して、ユーザに代わってサービスを完結することができる。

【０００９】請求項２に記載の発明は、請求項１において、前記アプリケーションが前記サービスを受信するための能力を検出する検出ステップと、前記代行ステップで受信した前記セッション上の前記サービスを、該検出ステップで検出された前記能力に応じて、受信形式を変換する変換ステップとを備え、前記転送ステップは、前記変換ステップで変換された前記受信形式で前記サービスを転送することを特徴とする。

【００１０】この方法によれば、ユーザの端末のサービスを受ける能力に応じて、サービスの受信形式を変換するので、情報転送を保証することができる。

【００１１】請求項３に記載の発明は、ユーザの端末に格納されたアプリケーションとサーバとの間に設定されたセッション上で提供されているサービスを、前記アプリケーションに代って行うプログラムを記録した記録媒体であって、前記ユーザの要求に応じて、前記セッションに関するセッション情報を記憶する記憶ステップと、前記セッションが、前記アプリケーションと前記サーバとの間で継続しているか否かを監視する監視ステップと、該監視ステップで、前記セッションが中断したと判断した場合には、前記アプリケーションに代って、前記記憶ステップで記憶した前記セッション情報に基づいて、前記サーバとの間で前記セッションを継続する代行ステップと、該代行ステップで受信した前記セッション上の前記サービスを、前記アプリケーションに転送する転送ステップとをコンピュータに実行させるためのプログラムを記録したコンピュータ読み取り可能な記録媒体であることを特徴とする。

【００１２】請求項４に記載の発明は、請求項３において、前記アプリケーションが前記サービスを受信するための能力を検出する検出ステップと、前記代行ステップで受信した前記セッション上の前記サービスを、該検出ステップで検出された前記能力に応じて、受信形式を変換する変換ステップとを備え、前記転送ステップは、前記変換ステップで変換された前記受信形式で前記サービスを転送することを特徴とする。

【００１３】請求項５に記載の発明は、ユーザの端末に格納されたアプリケーションとサーバとの間に設定されたセッション上で提供されているサービスを、前記アプリケーションに代って行うプログラムであって、前記ユーザの要求に応じて、前記セッションに関するセッション情報を記憶する記憶ステップと、前記セッションが、前記アプリケーションと前記サーバとの間で継続しているか否かを監視する監視ステップと、該監視ステップで、前記セッションが中断したと判断した場合には、前記アプリケーションに代って、前記記憶ステップで記憶した前記セッション情報に基づいて、前記サーバとの間で前記セッションを継続する代行ステップと、該代行ステップで受信した前記セッション上の前記サービスを、前記アプリケーションに転送する転送ステップとをコンピュータに実行させるためのプログラムであることを特徴とする。

【００１４】請求項６に記載の発明は、請求項５において、前記アプリケーションが前記サービスを受信するための能力を検出する検出ステップと、前記代行ステップで受信した前記セッション上の前記サービスを、該検出ステップで検出された前記能力に応じて、受信形式を変

換する変換ステップとを備え、前記転送ステップは、前記変換ステップで変換された前記受信形式で前記サービスを転送することを特徴とする。

【００１５】

【発明の実施の形態】以下、図面を参照しながら本発明の実施形態について詳細に説明する。

【００１６】図１は、本発明の一実施形態にかかるサービス代行制御方法を説明するための機能ブロック図である。サービスを受けるユーザの端末１０１と、サービスを提供するＷＷＷサーバ１０２は、ネットワーク１０３を介して接続されている。ネットワーク１０３は、本発明にかかるサービス代行制御方法を実行するサービス・エージェント（以下、ＳＡという。）１１１と、メールの転送制御を行うメール・トランスファー・エージェント（以下、ＭＴＡという。）１１３とからなるソフトウェア・モジュールを有している。

【００１７】端末１０１は、サービスを受けるためのアプリケーション１１４と、メールの送受信を制御するメール・ユーザ・エージェント（以下、ＭＵＡという。）と１１２を有している。本実施形態においては、サービス代行を行うエージェントが、アプリケーション１１４の場合とＭＵＡ１１２の場合とについて説明するが、いずれか一方であってもよいし、例えば、ブラウザなどの他のアプリケーションであってもよい。

【００１８】ＳＡ１１１は、ＷＷＷサーバ１０２とアプリケーション１１４とＭＵＡ１１２とに接続されて、セッションの記憶を行うセッション記憶部１２１と、代行制御のための要求を行うＷＷＷサーバ１０２に接続された代理要求部１２３と、アプリケーション１１４およびＭＵＡ１１２に接続された結果通知部１２２と、代行して情報を取得するＷＷＷサーバ１０２に接続された代理受信部１２５と、ＭＴＡ１１３に接続されたメディア変換部１２４とを有している。

【００１９】このような構成により、ＳＡ１１１のセッション記憶部１２１は、ユーザからの要求があった場合に、該当するユーザ毎のセッションを記憶しておく。ＷＷＷサーバ１０２の障害などによりサービスが停止して、情報転送が中断した場合には、代理要求部１２３を介して、ユーザの要求を代行する。代理要求部１２３は、ＷＷＷサーバ１０２との間で、セッション記憶部１２１に記憶されたセッションの再現を行う。ＷＷＷサーバ１０２から、サービス要求の承認を受信すると、結果通知部１２２は、ユーザが継続してサービスを受けられるか否かの判断を行い、受けることができる場合には、アプリケーション１１４に結果を通知する。

【００２０】代理受信部１２５は、セッション記憶部１２１に記憶されたセッションの接続状態を監視している。例えば、ユーザが、ＨＴＴＰ（Hyper Text Transfer Protocol）により情報配信を受けている場合に、ＨＴＴＰレスポンスを受信する前に、回線が切断された場合

に、代理受信部１２５は、ユーザに代わって情報の受信を行う。メディア変換部１２４において、ユーザのＭＵＡ１１２の能力を判断し、ＭＵＡ１１２がそのまま情報を受信することができるならば、受信した情報を電子メール形式に変換して、ＭＴＡ１１３に送信する。ＭＵＡ１１２が受信することができない場合には、メディア変換部１２４は、ＭＵＡ１１２の能力に合わせて電子メール形式に合わせてＭＴＡ１１３に送信する。

【００２１】図２は、本発明の一実施形態にかかるサービス代行制御方法を示すフローチャートである。ユーザからの要求があった場合に、ユーザの端末１０１とＷＷＷサーバ１０２との間のセッションを、セッション記憶部１２１記憶しておく（Ｓ２０１）。例えば、ＨＴＴＰを使用している場合には、ユーザの端末１０１からＷＷＷサーバ１０２に送信されるＧＥＴやＰＯＳＴなどのＨＴＴＰリクエストと、その結果、ＷＷＷサーバ１０２からユーザの端末１０１に返送されるＨＴＴＰレスポンスなどを記憶しておく。

【００２２】セッション記憶部１２１では、記憶されたセッションについて、ユーザの要求に対して、ＷＷＷサーバ１０２から適切な結果が返送されているかを監視する（Ｓ２０２）。適切な結果が返送されていない場合には、セッション記憶部１２１に記憶されているセッション情報を使用して、代理要求部１２３を介して、ＷＷＷサーバ1.０２へのユーザの要求を代行する（Ｓ２０３）。ユーザの要求に対して、ＷＷＷサーバ１０２から適切な結果が返送されているかを引き続き監視し、適切な結果が返送されていない場合には、ユーザ要求の代行を繰り返す（Ｓ２０４）。

【００２３】ＷＷＷサーバ１０２から、サービス要求の承認を受信すると、結果通知部１２２は、ユーザが継続してサービスを受けられるか否かの判断を行う（Ｓ２０５）。サービスを受けることができる場合には、結果通知部１２２は、アプリケーション１１４に結果を通知し（Ｓ２０６）、受け取った情報をそのままユーザに送信して終了する。サービスを受けることができない場合には、図３において後述するメディア変換を行って送信する処理に移る。

【００２４】図３は、本発明の一実施形態にかかるサービス代行制御方法におけるメディア変換の方法を示すフローチャートである。代理受信部１２５において、ユーザの要求に対するＷＷＷサーバ１０２からのレスポンスを受信する（Ｓ３０１）。例えば、ユーザが、ＨＴＴＰにより情報配信を受けている場合に、ＨＴＴＰレスポンスを受信して時に、回線が切断されたていた場合には、ユーザの意図しないサービス中断が発生したと判断し、代理受信部１２５は、ユーザに代わって情報の受信を行う。

【００２５】メディア変換部１２４において、ユーザのＭＵＡ１１２の能力を判断し、ＭＵＡ１１２がそのまま

情報を受信することができるか否かの判断を行う（Ｓ３０２）。ＭＵＡ１１２がそのまま情報を受信することができるならば、受信した情報を電子メール形式に変換して、ＭＴＡ１１３に送信する（Ｓ３０３）。ＭＵＡ１１２が受信することができない場合には、メディア変換部１２４は、ＭＵＡ１１２の能力に合わせて電子メール形式に合わせてＭＴＡ１１３に送信する（Ｓ３０４）。

【００２６】例えば、ＷＷＷサーバ１０２からＨＴＭＬ（Hyper Test Markup Language）形式の文書による情報提供サービスを受けている場合について説明する。メディア変換部１２４において、ユーザのＭＵＡ１１２の能力が、電子メール形式の１つであるテキスト形式の文書のみ受信できると判断した場合には、メディア変換部１２４は、ＨＴＭＬ形式の文書を、テキスト形式の文書に変換する。具体的には、ＨＴＭＬの文書リンクを、絶対パスをテキスト形式で表示したり、ＨＴＭＬの入力タグを（）などの記号に変換したりする。

【００２７】本実施形態によれば、ユーザの意図しないサービスの中断に対して、記憶されたセッション情報に基づいてセッションを再現することによって、サービスを代行して、ユーザに代わってサービスを完結することができる。

【００２８】また、従量課金制のインターネット接続を行っている場合に、中断されたサービスを代行して、ユーザに代わってサービスを完結することができるので、ユーザにとって無駄な課金を防ぐことができる。

【００２９】さらに、移動通信システムにおいては、無線回線の変動によって、回線の切断がおこるため、本実施形態によれば、回線復旧後に速やかにサービスの結果＊を受けることができる。

【００３０】

【発明の効果】以上説明したように、本発明によれば、ユーザの意図しないサービスの中断に対して、サービスを代行することによって、サービスの中断を防ぐことが可能となる。

【図面の簡単な説明】

【図１】本発明の一実施形態にかかるサービス代行制御方法を説明するための機能ブロック図である。

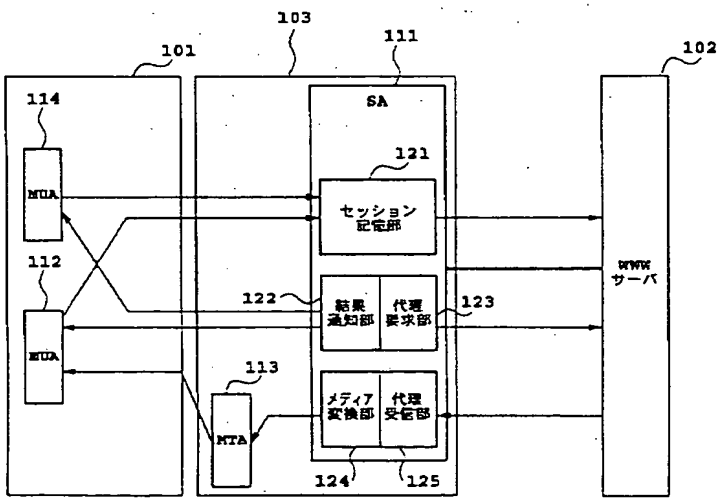
【図２】本発明の一実施形態にかかるサービス代行制御方法を示すフローチャートである。

【図３】本発明の一実施形態にかかるサービス代行制御方法におけるメディア変換の方法を示すフローチャートである。

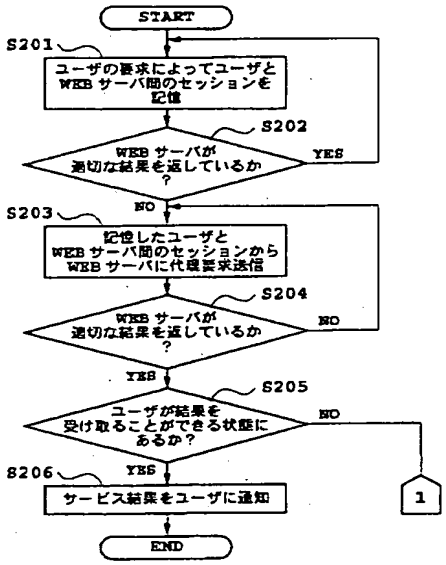
【符号の説明】

１０１	ユーザの端末
１０２	ＷＷＷサーバ
１０３	ネットワーク
１１１	サービス・エージェント（ＳＡ）
１１２	メール・ユーザ・エージェント（ＭＵＡ）
１１３	メール・トランスファー・エージェント（ＭＴＡ）
１１４	アプリケーション
１２１	セッション記憶部
１２２	結果通知部
１２３	代理要求部
１２４	メディア変換部
１２５	代理受信部

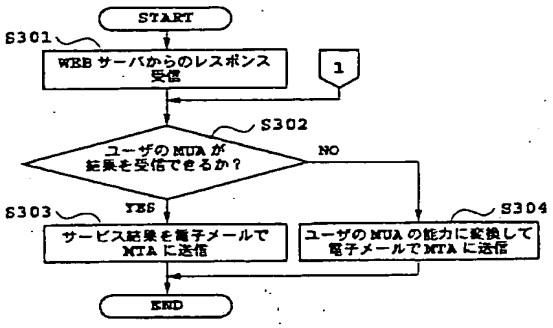
【図１】



【図２】



【図３】


START
S301
WEBサーバからのレスポンス受信
1
S302
ユーザのMUAが結果を受信できるか？
NO
YES
S303
サービス結果を電子メールでMTAに送信
S304
ユーザのMUAの能力に変換して電子メールでMTAに送信
END